



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/578,747

05/10/2006

Tomokazu Muraguchi

10517/331

4485

23838 7590 08/25/2010

KENYON & KENYON LLP
1500 K STREET N.W.
SUITE 700
WASHINGTON, DC 20005

EXAMINER

KLASTERKA, AUDREY ELLEN

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

08/25/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,747	Applicant(s) MURAGUCHI, TOMOKAZU	
	Examiner AUDREY KLASTERKA	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 and 10 is/are allowed.
- 6) ☒ Claim(s) 5,6,8,9 and 11 is/are rejected.
- 7) ☒ Claim(s) 5,6 and 8-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to amendments received 29 July 2010.

Claim Objections

1. **Claims 5-6 and 8-11** are objected to because of the following informalities: As to claim 5, line 14, --and-- should be added before "wherein". As to claim 11, line 22, there is insufficient antecedent basis for "the failure determining device". It is suggested this be changed to --a failure determining device-- to remedy the objection. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 5-6, 8-9 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirooka et al. (Japanese Patent 2003/314263 A using machine translation; hereinafter Hirooka) in view of Bone et al. (US Patent 5,319,928; hereinafter Bone).

4. As to claims 5 and 6, Hirooka discloses **a secondary air supply apparatus [1] for an internal combustion engine [2] installed in a vehicle** (paragraph 0014, 0026, and Figure 1), **which supplies secondary air to a portion upstream of an exhaust**

Art Unit: 3748

gas control device [41a, 41b] (paragraphs 0016-0017 and Figure 1), the apparatus [1] comprising: a pressure detector [14] that performs detection of a pressure of secondary air delivered under pressure from an air pump [13] to a passage [10] connecting to an exhaust gas passage [40a, 40b] (paragraphs 0017, 0020, 0023, 0027, and Figure 1); and a failure determining device [5] that determines whether failure has occurred in the secondary air supply apparatus [1] based on a result of the detection that is performed by the pressure detector [14] while the air pump [15] is controlled so as to be operated (paragraphs 0020, 0023, and 0027), wherein the internal combustion engine [2] is provided with plural cylinders [20], and wherein the secondary air supply apparatus [1] includes i) a first air passage [10] through which the air delivered under pressure from the air pump [13] flows, ii) a first opening/closing valve [15] which opens/closes the first air passage [10], iii) a second air passage [11a] which is connected to the first air passage [10] at a portion downstream of the first opening/closing valve [15], and which is connected to an exhaust passage [40a] leading to a predetermined cylinder (left cylinder) among the plural cylinders [20], iv) a second opening/closing valve [16a] which opens/closes the second air passage [11a], v) a third air passage [11b] which is connected to the first air passage [10] at a portion downstream of the first opening/closing valve [15], and which is connected to an exhaust passage [40b] leading to a cylinder (right cylinder) different from the predetermined cylinder (left cylinder) to which the exhaust passage connected to the second air passage [11a] leads, and vi) a third opening/closing valve [16b] which opens/closes the

Art Unit: 3748

third air passage [11b] (paragraphs 0014-0017 and Figure 1); and the failure determining device [5] determines whether failure has occurred in the secondary air supply apparatus [1] based on a result of the detection that is performed by the pressure detector [14] while the first opening/closing valve [15], the second opening/closing valve [16a], and the third opening/closing valve [16b] are controlled so as to be closed (paragraph 0017, 0020, 0023, and 0027; wherein as first opening/closing valve [15] is closed, second and third opening/closing valves [16a, 16b] would be closed as the upstream pressure would not be high enough to push open the check valves [16a, 16b] because the pump air supply is disconnected by closing the first opening/closing valve [15]). Hirooka does not disclose operating the pump when a magnitude of noise is larger than a predetermined value. Bone, however, teaches a method and arrangement for controlling the operation of a secondary air pump [12] (Title), wherein **an information obtaining device [6] that obtains information** (from engine speed sensor) **relating to noise heard wherein the information relating to the noise includes at least one of a vehicle speed** (col. 2 lines 60-63; wherein it is inherent that the speed of the engine creates noise), **a rotational speed of the internal combustion engine, and an opening amount of a throttle valve provided in the internal combustion engine; and a pump operating device [6] that operates the air pump [12] when a magnitude of the noise [n] is larger than a predetermined value** [nev] (col. 3 lines 37-50 and Figures 2-3). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to operate Hirooka's secondary air pump [13] when a magnitude of engine speed [n] is larger than a

Art Unit: 3748

predetermined value [nev] because Bone teaches that this ensures that the noise associated with the operation of the secondary air pump only starts when the engine is running and that no additional load on the current supply takes place during the start of the engine for a secondary air pump which is driven electrically (col. 3 lines 32-37).

5. As to claim 8, the modified Hirooka discloses **the secondary air supply apparatus according to claim 5, wherein the failure determining device [5] determines that failure has occurred in the secondary air supply apparatus [1] when an increase in the pressure is not detected by the pressure detector [14]** (paragraphs 0020 and 0027).

6. As to claim 9, the modified Hirooka discloses **the secondary air supply apparatus according to claim 5, wherein the failure determining device [5] determines whether failure has occurred in at least one of the pressure detector [14] and the air pump [13]** (paragraph 0020).

7. As to claim 11, the apparatus of claim 5 would inherently perform the method of claim 11.

Allowable Subject Matter

8. **Claims 1-4 and 10** are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: As to claims 1 and 10, providing the claimed device and detecting that failure in the secondary air supply apparatus has occurred based on a result of detection that is performed by the pressure detector while the first opening/closing valve is opened and

Art Unit: 3748

the second and third opening/closing valves are closed, and the air pump is stopped is new and novel over the prior art.

Response to Arguments

10. Applicant's arguments filed 29 July 2010 have been fully considered but they are not persuasive. As to claims 5 and 11, the applicant argued on page 9 of the Remarks that Hirooka does not disclose the failure determining device determining whether failure has occurred in the secondary air supply apparatus based on a result of the detection that is performed by the pressure detector while the first, second, and third opening/closing valve ***are controlled to be closed***. However, Hirooka discloses the ECU [5] controlling operation of the first opening/closing valve [15] via electromagnetic switching valve [19] (paragraph 0019) and further discloses that the second [16a] and third [16b] opening/closing valves are check valves which open when the upstream pressure is respectively high (paragraph 0017). Therefore, the second [16a] and third [16b] opening/closing valves are controlled by the operation of the first opening/closing valve [15] which controls the pressure upstream of the second [16a] and third [16b] opening/closing valves by either allowing or prohibiting pressure from the pump [13] to reach the second [16a] and third [16b] opening/closing valves. Therefore, as operation of the first opening/closing valve [15] is controlled to be closed during the failure detection (paragraph 0027), it is inherent that the second [16a] and third [16b] opening/closing valves would be closed as well, as they would not experience any pressure upstream, thus not experiencing the respectively high pressure they require to

Art Unit: 3748

open. The applicant argued on pages 10 and 11 of the remarks that the check valves [16a, 16b] do not equate to the applicant's second and third opening/closing valves as they do not close off passages [11a, 11b]. However, Hirooka discloses that the check valves only open when the upstream pressure is respectively high in the branch passages [11a, 11b]. It is inherent that a check valve operates by opening when a pressure overcomes a biasing force of the valve and closes when the pressure is not great enough to overcome this force, thus preventing backflow through the valve. Therefore, as the valves open when the upstream pressure is respectively high (paragraph 0017), the valves would close when the pressure is not high enough, thus rendering the check valves [16a, 16b] opening and closing valves. Furthermore, due to this same characteristic, the check valves would close off passages [11a, 11b] when the upstream pressure is not respectively high, such as when the first opening/closing valve [15] is closed, consequently restricting any pressure upstream of the second [16a] and third [16b] opening/closing valves, thus forcing the valves [16a, 16b] to close.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 3748

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AUDREY KLASTERKA whose telephone number is (571) 270-5286. The examiner can normally be reached on Monday - Thursday, 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas E. Denion/
Supervisory Patent Examiner, Art Unit 3748

/A. K./
Examiner, Art Unit 3748

Application/Control Number: 10/578,747
Art Unit: 3748

Page 9